

Insects Attracted to Carrion in Hawaii.

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Recently while carrying on experiments, with dead rats as bait, I was interested in the variety of insects attracted. Naturally the first to appear were the blow-flies, *Sarcophaga barbata* Thoms., *S. dux* Thoms., *Chrysomyia megacephala* (Fabr.), *Ch. albiceps* Wied., and *Lucilia sericata* (Meigen). Other flies breeding in carrion, usually coming after decay sets in, were *Ophyra nigra* Wied., *Fannia pusio* Wied., *Synthesiomyia nudiseta* van der Wulp, and these were accompanied by a considerable variety of insects, apparently attracted by the odor of decay, as follows: *Eristalis aeneus* (Scopoli), *E. punctulatus* Macq., *Dacus cucurbitae* Coq., *Atherigona excisa* Wied., *Musca domestica* Linn., *Euxesta annonae* Fabr., *Brachydeutera argentata* (Walker), the wasp, *Pachodynerus simplicicornis* Sauss., and the beetles *Clytus crinicornis* Chevr., and *Melanoxanthus melanocephalus* Thunb. Finally, when the carcass was pretty well decomposed, it was visited by the predaceous Staphylinid beetle, *Creophilus maxillosus* L., the young of which feed upon the larvae and pupae of the flies, and the skin beetles, *Dermestes vulpinus* Fabr., *D. cadaverinus* Fabr., *Attagenus plebeius* Sharp, and *Necrobia rufipes* Fabr.

I was interested to observe the predaceous habit of the larvae of *Chrysomyia albiceps*. After the carcass was almost eaten, the spiny larvae of this fly were frequently observed around the edges on the surface of the soil, with their hooks inserted into the bodies of the larger maggots of the Sarcophagids, etc. This observation led me to a little experiment. I placed fifty of these predaceous larvae in a jar of soil, with 100 larvae of the large Sarcophagid, *S. barbata*. On emergence, I found forty-eight of the *Ch. albiceps* came through in good condition—the other two dying in the puparium—while only fifty-nine of the Sarcophagids came through, three others dying in the puparium; hence, showing clearly that 38 per cent had fallen a prey to the larvae of the smaller, predaceous species. Since *Ch. albiceps* is a rather

recent introduction into these islands, from Australia, it may have an important bearing upon our other carrion feeders, especially the Diptera. It is worthy of note that *Lucilia sericata* is already noticeably scarce here, while both *Ch. albiceps* and *Ch. megacephala* have become exceedingly abundant.

While in Honopu, Napali, Kauai, last June, Mr. Bryan collected a very similar fauna from a dead goat in the advance stages of decay, with the addition of the predaceous Histerid beetle, *Saprinus lugens* Erich., the other Clerid, *Necrobia ruficollis* Fabr. and some earwigs.